

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (canceled).

2. (withdrawn): A linear guide bearing apparatus, comprising:
a guide rail including a first rolling groove which 25 axially extends on an outer surface thereof;

a main body fitted movably to the guide rail and including a second rolling groove confronted with the first rolling groove to form a load ball rolling path;
inside and outside members respectively disposed on an end surface of the main body to cooperatively form a curved circulating path defined by inside and outside curved faces;
a plurality of balls moving along at least the load ball rolling path and the curved circulating path; and

a separator interposed between the adjacent balls such that an axial line of the separator is parallel to or coincides to a straight line combining center points of the adjacent balls, the separator defining concave faces at both ends thereof in the axial direction respectively at least partially contacting spherical surfaces of the adjacent balls,

wherein an outer diameter of the separator is set to have a size more than a maximum outer diameter under a condition where the balls roll while contacting with the both inside and outside curved faces of the curved circulating path, and

a corner portion of the end surface of the main body at the second ball rolling groove side is chamfered to avoid interference with the separator.

3. (canceled).

4. (currently amended): A linear guide bearing apparatus, comprising:
a guide member having a curved circulating path defined by inside and outside curved faces;

a plurality of balls moving along the curved circulating path of the guide member; and
a separator interposed between the adjacent balls such that an axial line of the separator is parallel to or coincides to a straight line combining center points of the adjacent balls, the separator defining concave faces at both ends thereof in the axial direction respectively at least partially contacting spherical surfaces of the adjacent balls,

~~wherein an outer diameter of the separator is set to have a size more than a maximum outer diameter under a condition where the balls roll while contacting with the both inside and outside curved faces of the curved circulating path~~

wherein an outer diameter of the separator is such that an end of the separator closer to the inner curved face extends towards the inner curved face farther from the outer curved face than a point on the radial line of the separator, said radial line being perpendicular to the axial line and passing through a center of the separator, said point being at a distance from the outer curved face equal to a diameter of the balls, and

wherein an outer circumference of the outer diameter surface of the separator have a concave part for preventing interference with the inside curve in the curved circulating path.

5. (withdrawn): A linear guide bearing apparatus, comprising:
a guide member having a curved circulating path defined by inside and outside curved faces;
a plurality of balls moving along the curved circulating path of the guide member; and
a separator interposed between the adjacent balls such that an axial line of the separator is parallel to or coincides to a straight line combining center points of the adjacent balls, the separator defining concave faces at both ends thereof in the axial direction respectively at least partially contacting spherical surfaces of the adjacent balls,
wherein an outer diameter of the separator is set to have a size more than a maximum outer diameter under a condition where the balls roll while contacting with the both inside and outside curved faces of the curved circulating path, and
wherein the outer diameter face of the separator is slidingly contacted with the inside curve in the curved circulating path.

6. (withdrawn): The linear guide bearing apparatus according to claim 5, wherein an outer diameter surface of the separator includes a projection slidingly contacting with the inside curve in the curved circulating path.